

Remarks

The forgoing amendment has been made after a careful review of the present application, the references of record, and the Office Action dated August 26, 2004. In the preceding action, the examiner required an election of claims between three groups, with the claims divided into each of the three groups. In the election, the applicant elected to prosecute group number 3, being claim 10, but the election was traverse and the applicant argued that claim 10 was generic to all the claims. In the present action, the examiner has acknowledged the election of claim 10, but modified the restriction requirement and divided the groups into two species, species one being depicted in Figs. 1 through 4, and species two being depicted in Fig. 5. The examiner asserts that species one is described in claims 1, 2, 9, and 10, and therefore claims 3 through 8 were withdrawn from consideration. The examiner asked that the election be confirmed without traverse.

The drawings were objected to under 37 CFR 1.83(a), and the specification was objected to because of various minor errors. Certain minor objections were also raised to the claims. Finally, claims 1, 2, 9, and 10 were rejected under 35 USC 102(b) as being anticipated by Mahaney, US patent no. 5,884,927.

The applicant has submitted herewith amendments to Figs. 2 and 3 of the drawings and a new Fig. 6 intended to overcome the examiner's rejection thereto under 37 CFR 1.83(a). Among the objections, the examiner stated that the elements shown in Figs. 2 and 3 were not as stated on page 6 of the text. Namely, the "second gear 86 does not rotate with the first sprocket 62." To overcome this conflict,

indicia numbers 86 and 84 were exchanged on Figs. 2 and 3. The examiner also requested a new drawing to show the sliding action of the assembly 58. To show this, frame member 54 was added to Fig. 3 and new Fig. 6 was added. Fig. 3 shows the slide assembly 58 with the gears 84, 86 engaged to each other and new Fig. 6 shows the slide assembly with the gears 84, 86 disengaged from each other. It is believed with these amendments that the objections to the drawings have been overcome. The applicant believes that all the elements shown in new Fig. 6 have been clearly set forth in the specification such that the addition of new Fig. 6 does not constitute new matter.

The examiner has asked the applicant to confirm without traverse the election as set forth in the Office Action. The applicant confirms his election of claim 10 and acknowledges that the examiner has restructured the groups into two species, species one shown in Figs. 1 through 4 and species two shown in Fig. 5. Figs. 1 through 4 depict an embodiment of the invention wherein a first and second chain driver are provided between the pedal crank and the rear wheel, whereas Fig. 5 depicts a drive assembly in which a reversing structure is entirely encapsulated in the rear axle of the bicycle. Clearly, two different embodiments are depicted. The applicant agrees with the examiner that he should examine only the claims that are directed to species one and withdraw the remaining claims from examination until a claim generic to all embodiments is found to be allowable.

The applicant cannot confirm without traverse that the examiner has correctly divided the claims between species one and species two. The examiner's species one is described as being shown in Figs. 1 through 4 and includes a bicycle with a

first and a second chain drive extending between the pedal crank and the rear wheel. This structure is clearly recited in claim one, which requires "a second drive between said axle and said crank shaft." The applicant asserts, however, that claim 3, which sets forth "said second drive further comprising an idler shaft, a second chain and first and second sprockets..." also pertains to Figs. 1 through 4. Claim 4 is dependent upon claim 3 and includes all the elements of claim 3, claim 5 is dependent upon claim 4, and claim 6 is dependent upon claim 5. Claims 3, 4, and 5 all further narrow claim 1 and more specifically describe the embodiment depicted in Figs. 1 through 4, which the examiner has designated as species one. Similarly, claim 7 recites a "first chain drive for drivingly engaging said crank shaft with said axle" and "a second chain drive between said crank shaft and said axle." Clearly, claim 7 is directed to the embodiment shown in Figs. 1 through 4. Claim 8 is admittedly directed to species two. To the extent that the examiner has placed claims 3 through 7 in species two, the applicant must traverse the examiner's division of the claims.

The applicant hereby traverses the rejection of claims 1 and 2 as being anticipated by Mahaney. Mahaney discloses two one-way clutches on the pedal crank shaft, with the first one-way clutch 96 engaged when the pedals are rotated in a first direction, and the second one-way clutch 98 engaged when the pedals are rotated in the opposite direction. When the pedals are moved in the first direction, clutch 96 engages sprocket 14 which drives the chain 15 connected to the rear wheel 16 to move the bike forward. When the pedals are reversed, clutch 96 is disengaged and clutch 98 is engaged. When clutch 98 is engaged, it engages sprocket 106

which drives chain 118 and thereby drives sprocket 116. Sprocket 116 is connected by shaft 112 to gear 114, which is engaged with gear 102. Gear 102 therefore rotates in a direction that is opposite to the direction of rotation of the crank shaft 92. When the second one-way clutch 98 is engaged, gear 102 then rotates in the same direction as when one-way clutch 96 is engaged. Gear 102 is drivingly connected to sprocket 14 (clearly shown in Fig. 7) such that the bicycle is again driven through chain 15 in the forward direction even though the direction of rotation of the pedal crank is reversed. As stated in column 5, lines 53 and 54, "thus it will be seen that in either direction of pedaling, the drive sprocket 14 is driven in a forward direction." Regardless of which direction the pedals are cranked, force from the pedals is applied through the drive chain 15 from drive sprocket 14 positioned around the pedal crank to the rear wheel 16.

With respect to claim 1, and claim 2 which is dependent thereon, claim 1 recites a bicycle having a crank shaft, a rear axle, a chain drive between the crank shaft and the axle, and a one-way clutch for drivingly engaging the axle for rotation in one direction, and the improvement including a second chain drive for imparting rotational force from the crank shaft to the axle independent of the chain drive. Mahaney has only one drive, the chain drive 15. Mahaney does not have a second drive "imparting rotational force from said crank shaft to said axle independent of said chain drive." Contrary to the examiner's assertions, the clutches 96, 98 of Mahaney are one-way clutches and are not "manually operable clutches for selectively engaging and disengaging said second drive." Clearly, claim 1 defines over

Mahaney and the rejection of claim 1 and claim 2 which is dependent upon claim 1 as anticipated by Mahaney as obvious in view of Mahaney, are not well founded.

The applicant also traverses the rejection of amended claim 9 as anticipated by Mahaney. Claim 9 sets forth the elements of a common bicycle including a crank shaft, a rear wheel, a chain drive extending between the crank shaft and the axle, and a one-way clutch such that rotational force can be applied through the drive to the rear wheel in one direction only, and includes the improvement of "means for applying rotational force from said crank shaft urging said axle to rotate in a second direction," and a "manually operated clutch for selectively engaging and disengaging said mean." The second direction in which force is to be applied is opposite to that needed to move the bicycle forward, and therefore it is a breaking force.

As stated with respect to the rejection of claim 1 above, Mahaney discloses a device in which the pedals can be rotated in either a clockwise or counter-clockwise direction, and regardless of the direction in which the pedals are rotated, the bicycle is driven in a forwardly direction. Mahaney therefore does not provide means for applying force from the crank shaft to the axle urging rotation a "second direction" as is needed to slow or stop a bicycle. As also stated, the clutches of Mahaney are one-way clutches and are not manually operated, as required by claim 9. The rejection of claim 9 is therefore not well founded and must be withdrawn.

In similar fashion, the applicant traverses the rejection of claim 10 as anticipated by Mahaney. Claim 10 recites the elements of a bicycle in the same fashion as recited in claim 9 with the improvement of "means for applying rotational force from said rear wheel to said crank shaft while said rear wheel is rotating in said

first direction and a manually operated clutch for selectively engaging and disengaging said means." To engage the system of the present invention, the operator uses the lever arm 94 to manually engage or disengage the system, and when the system is engaged the pedal crank will be driven by the rear wheel to rotate in the opposite direction from that needed to drive the bike forwardly. With the pedals being rotated by force applied from the rotating rear wheel 17, the operator can use his feet to resist the movement of the pedals and thereby slow the bicycle. The drive of Mahaney, on the other hand, cannot be engaged by a manually operated clutch, as required by claim 10, and the drive of Mahaney will not cause rotational force from the forwardly rotating rear wheel to be applied to the crank shaft 92 such that the rider can slow the bicycle by resisting rotation of the crank shaft 92.

The force referred to in claim 10 originating from the rear wheel and applied to the crank shaft for rotating the crank shaft while the rear wheel is rotating in the first direction is effectively, the equal and opposite force to that defined in claim 9, that being rotational force from the crank shaft for urging the rear axle to rotate in a second direction (to slow the bicycle). The applicant submits that claim 10 clearly defines over Mahaney and the rejection of claim 10 as being anticipated by Mahaney must be withdrawn.

In view of the forgoing, the applicant submits that the claims being examined are clearly in condition for allowance and favorable reconsideration and allowance is requested.

Respectfully submitted,



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In the drawings:

Please amend the drawings as set forth in the attached pages. Amendments to Figs. 2 and 3 are shown in the attached pages in red, and new Fig. 6 is added on a separate page. Formal copies of the replacement pages of drawings and new Fig. 6 are attached as separate documents.

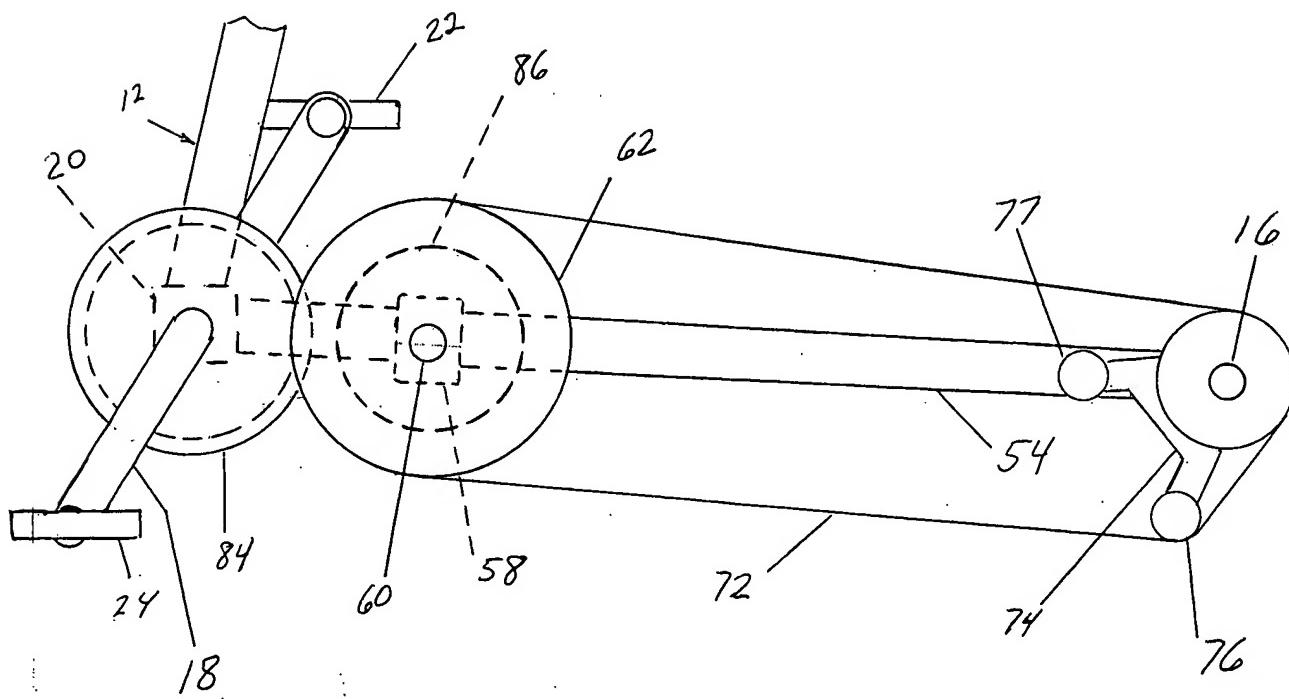
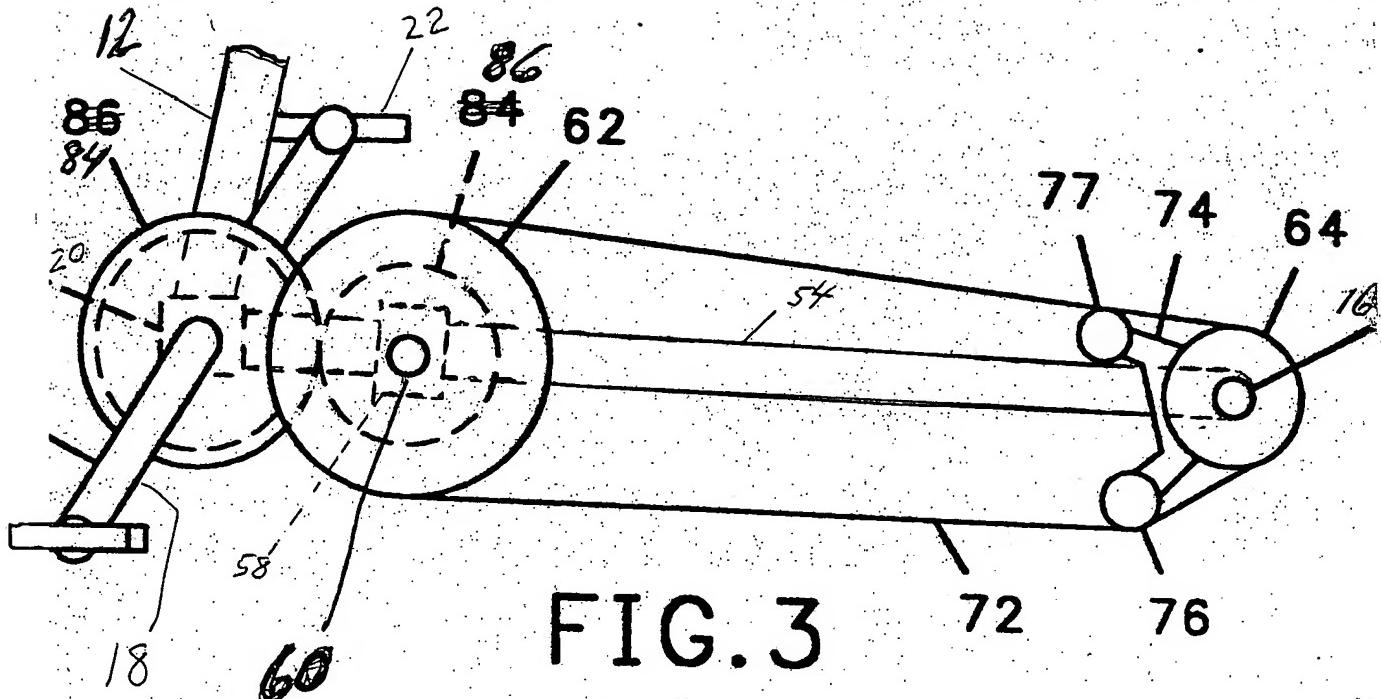


FIG 6

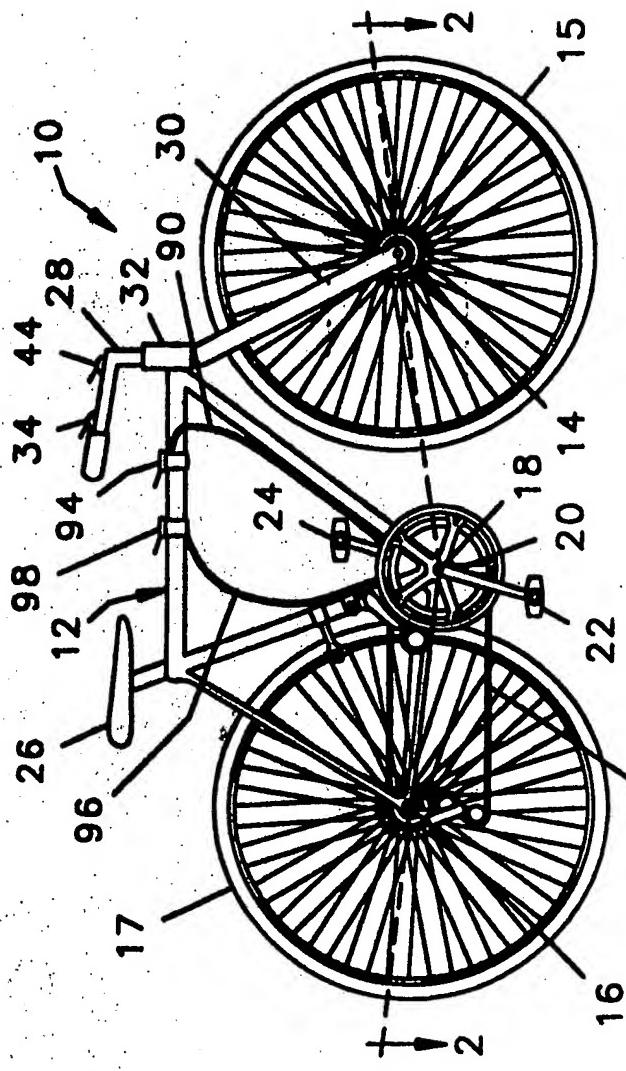


FIG. 1

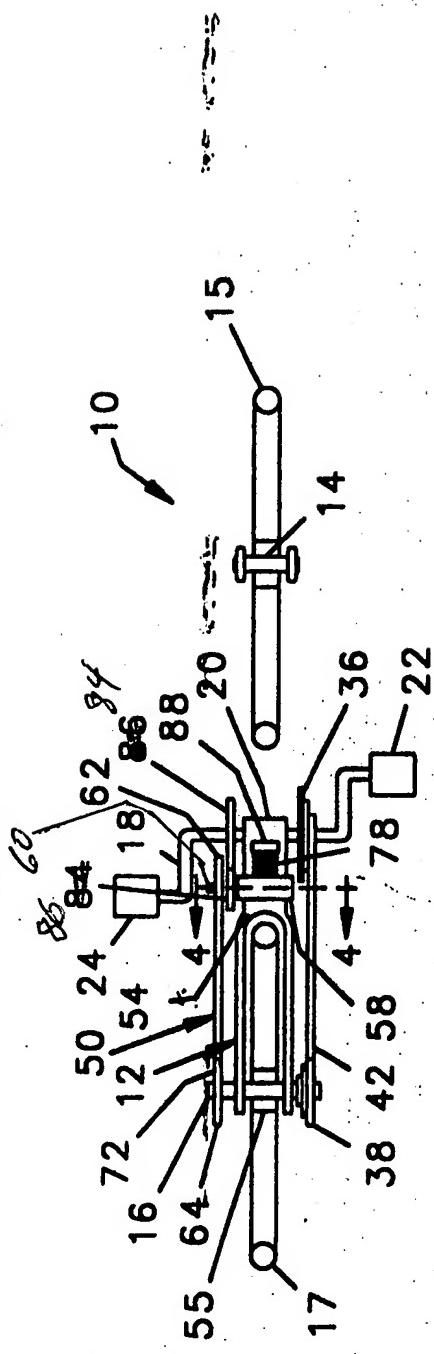


FIG. 2